Measuring the effect of patient comfort rounds on practice environment and patient satisfaction : A pilot study

Hourly rounding in the acute hospital setting has been proposed as an intervention to increase patient satisfaction and safety, and improve the nursing practice environment, but the innovation has not been adequately tested. A quasi-experimental pre-test post-test non-randomised parallel group trial design was used to test the effect of hourly patient comfort rounds on patient satisfaction and nursing perceptions of the practice environment, and to evaluate research processes and instruments for a proposed larger

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ABSTRACT

Hourly rounding in the acute hospital setting has been proposed as an intervention to increase patient satisfaction and safety, and improve the nursing practice environment, but the innovation has not been adequately tested. A quasi-experimental pre-test post-test non-randomised parallel group trial design was used to test the effect of hourly patient comfort rounds on patient satisfaction and nursing perceptions of the practice environment, and to evaluate research processes and instruments for a proposed larger study. A Patient Satisfaction Survey instrument was developed and used in conjunction with the Practice Environment Scale of the Nursing Work Index. Results on patient satisfaction showed no significant changes. Significant changes were found for three of the five practice environment subscales. Consistent with the aim of a pilot study, this research has provided important information related to design, instruments and process that will inform a larger sufficiently powered study.

Key words: patient comfort rounds, patient satisfaction, nursing practice environment, nursing practice, pilot study

INTRODUCTION

In Australia as elsewhere, the contemporary health service environment is under pressure and subject to calls for innovation to improve operational efficiency and quality and safety of patient care. The ongoing shortage of registered nurses delivering skilled care at the bedside is a significant factor in this context. However, it is only very recently that innovations in models of nursing care delivery have started to receive research attention. Nursing is at the centre of the patient's hospital experience and is therefore well positioned to influence the quality of patient care and prevention of patient adverse events. Conversely, the practice environment issues that impact on care quality and patient safety (such as skill mix, clinical leadership, staffing levels) are also significant factors in nurse retention.

The aim of this pilot study was to test the effect of a model of practice that optimised the role of the assistant-in-nursing (AIN) in skill mix. Implementation of this model of nursing service has the potential to positively influence patient care management and safety, and patient satisfaction with hospital care. It also has the potential to reduce constant high demand on nurses' time that can lead to stress, burnout and high staff turnover in the nursing practice environment.

LITERATURE REVIEW

Recent research has focused on the quality of nurse-patient communication and interaction,[1,2] and on patients' perceptions of the care they receive[3,4] as being primary indicators of patient satisfaction levels. Both the quality of the nurse-patient interaction and patient perceptions of care have been found to relate significantly to the nurse's ability to meet the patient's immediate physical and clinical needs in a timely fashion[5] and to provide a physical comforting presence.[6,7]

There are various ways in which this nursing response to the needs of a hospitalised patient may be compromised, but one of the most obvious is a delay in response to the patient's call bell. In a busy acute care ward where the nurse is responsible for care of multiple patients the call bell becomes an essential tool for patients requiring assistance, whether with clinically urgent matters such as pain or vomiting, or simply with reaching a drink on the table. Potter *et al*.,[8] in their study of the cognitive work of acute care nurses, found that on average nurses moved from one location on the ward to another 13 different times every hour, with approximately two activities carried out at each location. Other research has reported that nurses are called to each patient's room or bedspace from 12 to 15 times a day for non-urgent requests and each call takes at least 4 minutes of nursing time.[4] Additionally, the greatest demand from call bells is before and after meals and at change of shift,[9] times when staff are already busy. This constant demand to respond to patient calls invariably interrupts the immediate nursing care work and delays or interrupts other patient care activities.

Unanswered patient calls result in frustration, dissatisfaction, and potential threats to patient safety and necessary clinical care.[4,9] There is a large body of research reporting on adverse events in hospital patient care, and it is known that patient falls are a major burden on the Australian health care service.[10] Patients most at risk of falling are those who have previously fallen, those with special toileting needs, those on a range of medications, or with impaired mental or physical status:[11] all indicators which are highly relevant to elderly patients with unanswered call bells.

Call bells, and the reasons why response to them may be delayed or omitted, are a part of what has come to be known as the nursing practice environment.[12] The concept of the nursing practice environment encompasses all aspects of the real-time

practical context in which nurses deliver patient care, and includes such issues as staffing levels, leadership, resource management, interpersonal relations, and models of care as well as the built physical environment. Studies in this area have found significant effects of various aspects of the nursing practice environment on nursing work satisfaction,[13] work effectiveness and conflict resolution,[14] and nursing burnout.[15] Nurse burnout in relation to the nursing practice environment was also found to have significant correlations with patient safety,[16] risk of death and failure to rescue,[17] and patient satisfaction.[18]

Nursing rounds have been posited as one possible response to these complex issues. Interventions involving 1- or 2-hourly nursing care rounds have been tested in pilot studies[19] and larger studies[4] and have been found to reduce call bell usage and improve patient safety and reported satisfaction. The specific concept of patient comfort rounds was introduced by Castledine *et al*.[20] in the UK in 2005, but has not been systematically trialled. Patient comfort rounds have implications for skill mix and staffing levels as they focus on immediate patient comfort rather than on higher level clinical care delivery.

This study implemented and evaluated an innovative approach to skill mix in the highly complex acute care environment that would both meet patient care management needs and improve work conditions for experienced nurse clinicians.

METHODS

Study aims and hypotheses

This was a pilot study to evaluate methods and tools for a proposed larger study.[21] The aim of the pilot study was to test the effect of a one-hourly patient comfort rounds

intervention on patient satisfaction and on nursing perceptions of the practice environment. The following hypotheses were tested:

1) An acute surgical ward that has one-hourly patient comfort rounds will record higher patient satisfaction scores than a ward without patient comfort rounds.

2) An acute surgical ward that has one-hourly patient comfort rounds will record more positive nurse perceptions of the practice environment than a ward without patient comfort rounds.

Patient comfort round intervention

The patient comfort round intervention was standardised for all patients on the experimental ward. An assistant-in-nursing (AIN) who had received training to the level of Certificate 3 in Aged Care conducted an hourly round between 1600 and 2200, Monday to Friday, for the duration of the study. The AIN visited each patient in turn and worked to a protocol of standardised patient care procedures (see Figure 1). The AIN provided relevant reporting on care requirements to the registered nurse caring for the patient.

Figure 1 Comfort rounds protocol

<table>
<tr><td colspan="2">With each patient the nursing assistant will follow the following protocol:</td></tr>
<tr><td>o Ask patient if they need toileting, pain control, repositioning, blanket
o Position telephone, tissue box, bed table, TV control within reach
o Attend to mouth care if necessary
o Provide oral fluid if relevant
o Prior to leaving ask the patient if they need any specific clinical or comfort care</td><td>Consistent with the level of training the nursing assistant will provide care related to
o Toileting (assistance to the toilet or/and supply of bed pan)
o Repositioning
o Supply of blanket/s
o Mouth care
o Help with oral fluids where relevant</td></tr>
<tr><td colspan="2">Reporting on all care requirements other than above will immediately be made to the RN caring for that patient</td></tr>
</table>

Setting and sample

The research was conducted over an eight-week period on matched acute surgical wards (as experimental and control sites) at the Royal Brisbane & Women's Hospital in Brisbane, Australia. The study sample comprised 61 consenting patients and 23 consenting nurses in the intervention ward, and 68 consenting patients and 16 consenting nurses in the control ward.

Design

This was a quasi-experimental pilot study using a non-randomised parallel group trial design. All patients on admission and all nursing staff on both wards were supplied with information and consent packages by a research assistant and provided with an explanation and opportunity to question. Data collection was conducted over an eight-week period.

Data collection

Patient Satisfaction Survey

The Patient Satisfaction Survey (PSS) was developed by the research team to specifically illustrate the effects of the patient comfort rounds intervention. Various published scales and surveys were consulted (eg. Suhonen *et al*.[22]) and influenced the development of the final instrument. The instrument as used in the pilot study was subjected to psychometric testing for reliability. The PSS contains nine statements related to: having needs met in a timely fashion; individualised care; timely attention to call bells; and nursing care. Patients responded to each statement on a scale ranging from 'strongly agree' (1) to 'strongly disagree' (5) with a midpoint of 'uncertain' (3).

Participating patients were asked to complete the PSS questionnaire on discharge from hospital.

Practice Environment Scale

The effect of the comfort rounds intervention on nurse perceptions of the practice environment was measured using the Practice Environment Scale of the Nursing Work Index (PES-NWI), a previously validated instrument.[23,24,25] The PES-NWI generates five subscale scores that represent perceptions of various aspects of the nursing work environment: nurse participation in hospital affairs; nursing foundations for quality of care; nurse manager ability, leadership, and support of nurses; staffing and resource adequacy; and collegial nurse-physician relations. Responses on these subscales are scored so that they lie in the range 1-4, where a higher score indicates a more positive perception. Nurses were asked to complete the PES-NWI questionnaire at three time points: the week prior to commencement of the comfort rounds (Time 1); the fourth week of the rounds (Time 2); and two weeks after completion of the rounds (Time 3).

RESULTS

Patient Satisfaction Survey

Demographics and results

The study sample comprised 61 patients (29 female, 32 male) in the intervention ward and 68 patients (27 female, 41 male) in the control ward. Seventy-five percent of the intervention sample and 70% of the control sample were aged 42 or over. The mean length of stay was 6.9 days for the intervention ward and 8.5 days for the control ward. None of these differences between control and intervention groups were found

to be statistically significant. Furthermore, none of these variables was correlated with the Patient Satisfaction Survey (PSS) responses. Patients' responses tended to cluster in the 'strongly agree' and 'agree' options, and there was no statistically significant difference between the groups.

Reliability of the PSS

The dimensionality of the PSS items was examined using principal components analysis (PCA). In the present analysis a component refers to a cluster of items in the PSS. If all of the items cluster into one component, the measure is unidimensional; if more than one emerges, the measure is multidimensional.

A whole sample (ie. control and intervention groups) PCA with oblique rotation revealed the presence of two components that accounted for 70% of the total variance; that is, the two components of the PSS captured a large proportion of the information about individual differences in satisfaction. The pattern of loadings for the nine items on the two components is presented in Table 1. Following convention, loadings less than .4 have been excluded, and those in the table appear in rank order of magnitude within each component.

Table 1: Loadings of PSS items on two components from PCA with oblique rotation

	Item	Component	
		1	2
6	I was not kept waiting when I used my call bell	.890	
5	I was able to see a nurse when I needed to	.853	
8	I was not kept waiting when I needed to use the toilet, bed pan or urinal	.831	
2	When I needed to I was able to talk with a nurse	.797	
7	I was able to get pain relief when I needed it	.547	
3	The nurses on the ward treated me with respect		1.014
9	I felt comfortable and safe during my time in this ward		.814
4	The nurses were interested in my feelings about my care		.735
1	I am satisfied with the nursing care I received		.615

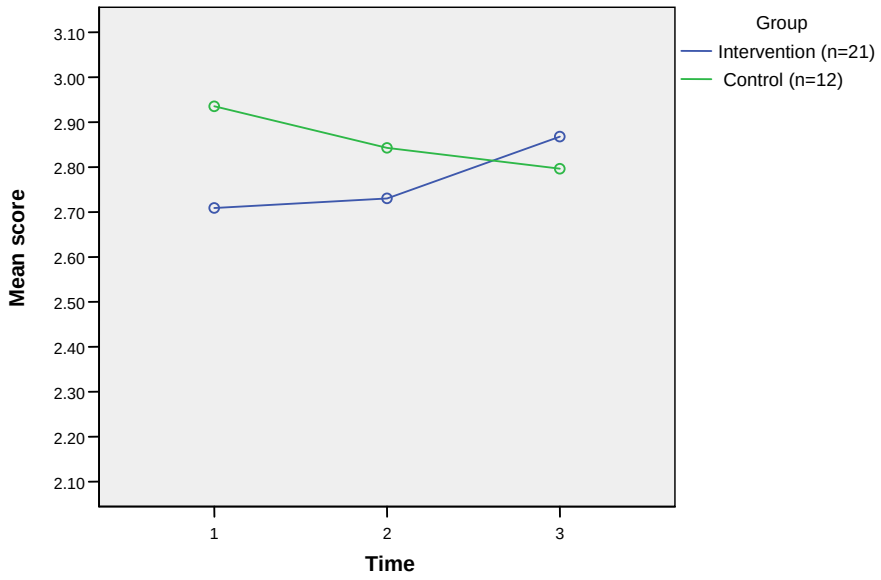
The loadings indicate the presence of two well-defined components, where each item plays a role and each contributes to only one component. Component 1 comprises the five items that refer to specific nursing behaviours, while the four items in component 2 relate to nursing care generally. Thus it appears that the PSS developed for this study has a two-dimensional structure. However, the two components have a Pearson's r correlation of approximately .6, suggesting that they should be seen as two facets of a single construct. From a measurement perspective this means that the items may be used either in two subscales, comprising the subsets shown in Table 2, or in a single nine-item scale. This proposal gains further strength when Cronbach's alphas are calculated for the full scale and the subscales. For the PSS the alphas are .89 for the full scale, .86 for the component 1 subscale, and .82 for the component 2 subscale. All of the foregoing analyses suggest that the PSS has good reliability but needs further testing.

Practice Environment Scale

There were no significant differences in sex, age, level of professional education, and years of nursing experience between the control and intervention groups of nurses who were surveyed with the PES-NWI.

No statistically significant differences were found between groups or across time on the nurse participation subscale. The quality of care subscale showed a significant difference between the two groups ($p<.03$), with the intervention group exhibiting a positive trend and the control group a negative trend. These trends were also significant over time within each group ($p=.05$ for the intervention group, $p=.04$ for the control group) (see Figure 2).

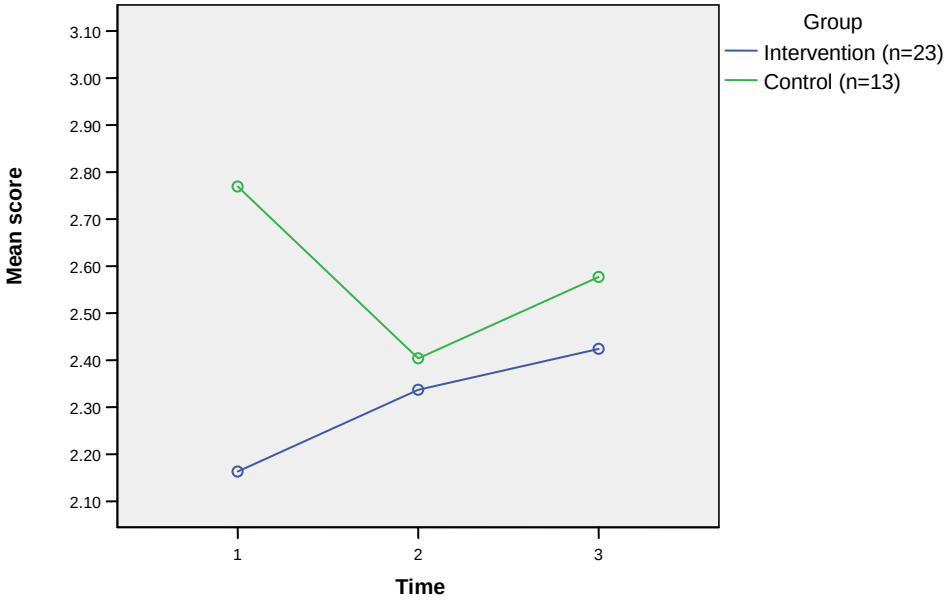
Figure 2: Means for quality of care subscale by group and time



There was no significant difference between groups on the nurse manager attributes subscale, though there was a significant main effect for time (p=.05) due to a significant decline (p=.003) in the control group scores between times 1 and 3.

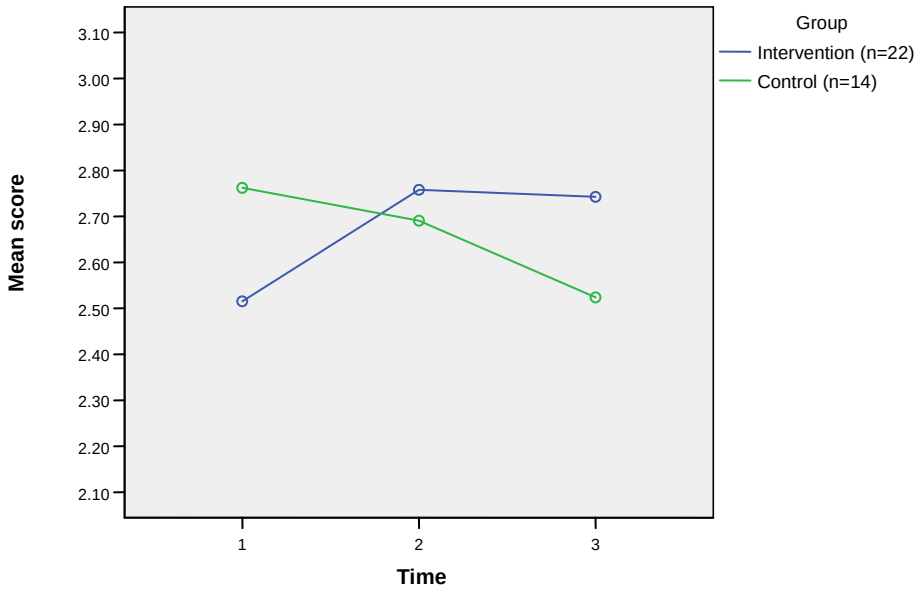
There was a significant between-group difference (p=.001) and significant within-group time differences on the resource adequacy subscale (see Figure 3). T-tests showed that in the intervention group there were significant increases for time 1-2 (p=.04) and time 1-3 (p=.002), while the control group only exhibited a significant decline for time 1-2 (p=.05).

Figure 3: Means for resource adequacy subscale by group and time



There was a significant group difference for the professional relations subscale (p=.02), with the intervention group scores increasing significantly over time (p=.04) (see Figure 4).

Figure 4: Means for professional relations subscale by group and time



DISCUSSION

The results from the Patient Satisfaction Survey showed no significant differences between the experimental and control groups of patients. This is most likely due to the small sample size, though this factor may have been further compounded by patients' reluctance to complain (or to be seen to complain) about nursing care.[2] However, while the data produced no significant findings between groups, the principal components analysis of the PSS showed good reliability, multidimensionality, and a degree of flexibility in how it may be administered, which together provide a strong basis for using the PSS in a larger fully-funded study of the effect of patient comfort rounds.

The results from the Practice Environment Scale suggest that, overall, nurses who participated in the comfort rounds experienced improvements in their perceptions of quality of care, resource adequacy, and professional relations. Improvements in the first of these seemed to occur during the first four weeks of the study, while those in the latter two perceptions were more evident in the second four weeks, suggesting that

the immediate effects of an intervention on direct patient care are more perceptible for clinical nurses than effects on 'bigger picture' issues that may take time to become apparent. These findings generally agree with and support previous studies on the effects of patient-centred quality of care interventions on the nursing practice environment.[14-17]

In the control group there were unexpected declines in nurses' perceptions of quality of care, nurse manager attributes and resource adequacy. For the first and last of these, the control group started the study with notably more positive perceptions than those of the intervention group, and so may have exhibited some regression to the mean. It is also possible, though unmeasurable, that there may have been a perception on the control ward that the intervention ward were being given preferential treatment by having the comfort rounds intervention, thus leading to a decline in work satisfaction among the control group nurses.

Limitations of the study

This pilot study tested the feasibility of procedures and reliability of a newly developed instrument (the Patient Satisfaction Survey) in order to inform design modifications for a larger study.[21] Due to funding constraints and specific organisational issues, the final sample sizes of 61 and 68 patients were approximately half the originally anticipated sample size of 120 patients in each ward. Also, the sample sizes of nurses for the PES-NWI were limited, particularly in the control group.

CONCLUSION

While this pilot study was of limited size and scope, and produced few significant findings in terms of patient- and nurse-related data, it did achieve its primary objectives: it allowed the development of a reliable and focused patient satisfaction survey instrument, and it confirmed that nurse-led, patient-centred, and quality-of-care oriented therapeutic interventions can have a positive effect on the nursing practice environment, and therefore potentially on patient safety and satisfaction measures such as call bell usage, patient falls and pressure injury rates. However, this potential needs to be properly tested by incorporating these outcome measures in a larger study. The necessity of a pilot study has been further confirmed in that limitations of the study and potential methodological and operational weaknesses (such as blinding and random allocation, and hospital organisational issues) have been identified[21] and can be resolved for the purposes of a larger fully-funded study of a patient comfort rounds intervention and its potential effect on patient safety, patient satisfaction, and the nursing practice environment.

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